

The Examiner perceives these steps as critical or essential to the practice of the invention, but not included in the claims. Applicant disagrees in that even though the written description describes this method for manufacture of the compositions of the present invention at page 31, the disclosure also describes the invention broadly.

The Manual of Patent Examining Procedure (M.P.E.P.) addresses this type of rejection as follows:

In determining whether an unclaimed feature is critical, the entire disclosure must be considered, features which are merely preferred are not to be considered critical.

Limiting an applicant to the preferred materials in the absence of limiting prior art would not serve the constitutional purpose promoting the progress in the useful arts. Therefore, an enablement rejection based on the grounds that a disclosed critical limitation is missing from a claim should be made only when the language of the specification makes it clear that the limitation is critical for the invention to function as intended. Broad language in the disclosure, including the abstract, omitting an allegedly critical feature, tends to rebut the argument of criticality.

M.P.E.P. § 2164.08 (c)(citations omitted) (Emphasis added).

Applicant points out in this respect, that the first paragraph on page 20 of the written description describes the invention as comprising "a lubricant composition of matter comprising a superabsorbent polymer combined with a material for decreasing friction between moving surfaces. . . ." Applicant repeats this description of the invention several times throughout the written description and the claims without confining the invention to the method the Examiner refers to in the July 5, 2001 Office Action.

Even though the Examiner focuses on the last three paragraphs of page 31 of the written description regarding one of several methods of making the composition (see, for example, pp. 35-36), this does not constitute the only method, and as stated in M.P.E.P. § 2164.08(c) the Examiner focusing on this aspect of the disclosure ignores the entire disclosure which she must consider. The Examiner has also failed to take into account the broad language in the disclosure which omits or makes no reference to the feature on page 31 that she refers to in her July 5 Office Action.

The Examiner rejects claims 36-38 and 40 under 35 U.S.C. §112, second paragraph, as indefinite for allegedly failing to particularly point and distinctly claim the subject matter which applicant regards as the invention. Applicant traverses the rejection and requests further consideration and reexamination in view of the amendments to claims 36-38 and 40 which applicant submits avoid the rejections.

The Rejection Under 35 U.S.C. §102(b) and Traverse

The Examiner rejects claim 1 under 35 U.S.C. §102(b) as "anticipated by Hopkins, Jr., et al. United States Patent No. 5,362,788 combined with the Merck Index and Admitted Prior Art." (July 5 Office Action, page 4, last paragraph)(emphasis added). Applicant traverses the rejection and requests further consideration and reexamination.

A 35 U.S.C. §102 rejection sometimes referred to as "anticipation" cannot employ multiple references since a "finding of anticipation requires that all aspects of the claimed invention were already described in a single reference. . . . If it is necessary to reach beyond the boundaries of a single reference to provide missing disclosure of

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the claimed invention, the proper ground is not §102 anticipation, but §103 obviousness." Scripps Clinic v. Genentech Inc., 927 F.2d 1565, 18 U.S.P.Q. 2d 1001, 1010 (Fed. Cir. 1991) (citations omitted) (emphasis added). Here, the Examiner has employed the secondary references to supply elements lacking in the principal reference she relies on to make the rejection.

The Examiner also rejects claims 1, 29, 35, 41 and 42 under 35 U.S.C. §102(b) as anticipated by the Admitted Prior Art, Levy, United States Patent number 4,985,251 combined with Brannon-Pappas. Applicant traverses the rejection and requests further consideration and reexamination.

The Examiner has applied Brannon-Pappas in a manner to amplify the Levy disclosure, but in any event, Levy does not teach applicant's invention of claim 29 or 35 since both describe the presently claimed lubricant as water containing a lubricant additive wherein the lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

Claim 41 relates to materials for decreasing friction which are a fatty oil, fatty acid, or wax material or mixtures thereof which optionally contain a lubricant additive, whereas the Levy film forming agent Arosurf® MSF is poly(oxy-1,2-ethanediyl), alpha-isooctadecyl-omegahydroxy (CAS 52292-1), a compound that does not fall into the Claim 41 materials for decreasing friction.. Claim 42 relates to synthetic oil lubricants or greases thereof. Nothing in Levy teaches Arosurf® MSF comprises a synthetic oil lubricant or grease. Applicant defines these synthetic oils or greases thereof on pages 10-15 of the written description inter alia as low molecular weight polyolefins, ester lubricants, polyglycols, silicones, organic phosphates, polyphenyl ethers, silicates, chlorinated aromatics, and fluorocarbons, or at

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page 32, as a two-mole ethoxylate of isostearyl alcohol, none of which encompass the film forming agent Arosurf® MSF.

The Rejection under 35 U.S.C. §103(a) and Traverse

The Examiner rejects claims 1, 29, 35-36, and 41-43 under 35 U.S.C. §103(a) as unpatentable over Sayad et al., United States Patent No. 3,336,225 ("Sayad") combined with admitted prior art in view of Hopkins, Jr. et al., United States Patent No. 5,362,766 ("Hopkins") and Geursen et al., United States Patent No. 5,534,304 ("Geursen") and its counterpart WO 93/182,263. Applicant traverses the rejection and requests further consideration and reexamination.

Applicant distinguishes Sayad for the reason that the reference does not teach superabsorbent polymers, but only water soluble acrylamides in combination with an aqueous soap solution in a method for reducing friction on a conveyor. In addition to failing to teach superabsorbent polymers, the reference also does not describe the use of lubricant additives with the aqueous soap solution.

Hopkins describes a method for combining a superabsorbent polymer with a matrix material such as cellulose acetate, methacrylate polymers, polyvinyl acetate, copolymers and combinations of these polymers. (Hopkins, col. 1, lines 29-35; col. 2, lines 10-19). The reference goes on to state that the matrix material further includes "plasticizers" which, the skilled artisan knows increases the flexibility of the matrix material, i.e., cellulose acetate, methacrylate polymers, polyvinyl acetate, copolymers and combinations of these polymers.

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The examples describe adding a solution of cellulose acetate in acetone in combination with a superabsorbent polymer (Sanwet® IM-1000) and glycerine to a high shear mixing apparatus to form a solution, which when subsequently cast into films and air dried retains a 0.9% saline solution.

Not only does the reference constitute non analogous art in that it fails to teach anything about the formation of a lubricant or the use of the material for the purpose of lubrication, but also the present invention excludes the matrix material of Hopkins by couching the present claims in terms of materials "consisting essentially of" the various components of applicant's lubricant composition.

Both Guersen references have the same written description and applicant will refer to the U.S. Patent to discuss the Guersen teachings. Guersen discloses a process for treating a substrate such as a fiber or fibrous product with a superabsorbent material. The reference describes applying a layer of a water-in-oil emulsion containing a superabsorbent polymer in an aqueous phase, followed by wholly or partially removing the liquid constituents of the emulsion. (Col. 3, lines 15-23). Guersen forms the emulsion by polymerizing a water-soluble superabsorbent monomer with water in a non polar solvent miscible with the water and the monomer to form the polymer in the aqueous phase of the emulsion. (Col. 4, lines 1-16). Geursen also discloses the use of commercially available water-in-oil emulsions prepared in the same way which may also include additives. (Col. 4, lines 38-43). The reference describes yarns coated with a superabsorbent polymer composition which have a "swelling value" (Col. 7, lines 19-44) defined by a formula (Col. 7, lines 45-51). The swelling value consists of a number that indicates the relative water absorbency of the yarn or the yarn coated with the superabsorbent polymer composition.

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Guersen, however, does not teach or suggest superabsorbent polymers that can absorb greater than about 100 times their weight in water for the process or product disclosed. An analysis of the data in columns 9 and 10 bears this out. Table A, reports experimental data for the swelling values of yarn samples coated with a water-in-oil emulsion where the yarn is a polyester yarn and that the untreated polyester yarn has a swelling value of 9. Using the formula in col. 7, lines 45-51 and arbitrarily setting the weight of the yarn (the value for "a") at 100 grams shows the following:

Exp. 1 Swelling value of uncoated yarn = 9

$$\frac{100-b}{b} = 0.09$$

$$100 = 1.096 b$$

$$b = 91.74 \text{ (dry weight of yarn)}$$

Yarn water absorption = $100 - 91.74 = 8.26$

Exp. 1 Swelling value of coated yarn = 114

$$\frac{100-b}{b} = 1.14$$

$$100 = 2.146 b$$

$$b = 46.72 \text{ (dry wt. of coated yarn)}$$

Coated yarn water absorption = $100 - 46.72 = 53.28$

$$53.28 - 8.26 = 45.02 \text{ water absorbed by superabsorbent polymer}$$

$$46.72 \times 2.72\% \text{ polymer} = 0.98 \text{ superabsorbent polymer on yarn}$$

$$\frac{45.02}{0.98} = 45.8 \text{ Superabsorbent polymer absorbs 45.8 times its weight in water.}$$

This shows that 0.98 grams of superabsorbent polymer picked up or absorbed 45.02 grams of water or 45.8 times its weight in water, almost one half of that of applicant's claimed superabsorbent polymer which absorbs greater than about 100 times its weight in water. The same calculations will show the superabsorbent polymer of experiment 4 (Table B) coated on a nylon-6,6 yarn absorbs about the same amount of water, i.e., less than about one half applicant's claimed superabsorbent polymer that absorbs greater than about 100 times its weight in water.

These data from Guersen clearly suggest that the inventors did not know how to combine a superabsorbent polymer that absorbs greater than about 100 times its weight in water with a lubricant. Furthermore, an analysis of the entire reference also reveals that Guersen and his co-inventors do not disclose using a superabsorbent polymer that absorbs greater than about 100 times its weight in water.

The Examiner admits that applicant's claims differ from the cited references by requiring that the superabsorbent polymer absorbs greater than about 100 times its weight in water, except for the superabsorbent polymer of claim 1. (July 5 Office Action, p.7, first full paragraph.) The present amendment, however, cancels claim 1. The Examiner nonetheless takes the position that the skilled artisan would find it obvious to use a superabsorbent polymer that absorbs greater than about 100 times its weight in water especially in view of the admitted prior art and Hopkins.

Applicant respectfully disagrees in that Hopkins only describes a superabsorbent polymer enveloped by a plasticized matrix based on cellulose acetate, methacrylates or vinyl acetate polymers and copolymers or mixtures thereof, which has to be viewed with Guersen who apparently was not able to formulate a composition with a superabsorbent

polymer that absorbs greater than about 100 times its weight in water. This does not comprise applicant's invention since the claims of the application do not relate to a superabsorbent polymer in a matrix, or the use of cellulose acetate or other polymers that have been softened with a "plasticizer" as described by Hopkins.

The Examiner rejects claims 30-34 and 37-40 under 35 U.S.C. §103(a) as unpatentable over Sayad combined with admitted prior art in view of Hopkins and Guersen, and further in view Schey and Booser. Applicant traverses the rejection and requests further consideration and reexamination.

Applicant distinguishes Sayad, the admitted prior art, Hopkins, and Guersen for all the reasons previously set out in this amendment. The references to Schey and Booser merely describe lubricant technology applicant referred to in Kirk-Othmer Encyclopedia of Chemical Technology, Second Edition, pp. 559-595 in the last paragraph on page 18 of the written description. The various lubricants and lubricating systems described in Schey and Booser only elaborate on the description of the lubricant materials applicant included in pages 6-19 of the written description and the lubricants described in Kirk-Othmer that applicant previously brought to the attention of the Examiner. The invention, however, does not relate to the lubricant material per se, but lubricant materials in combination with a superabsorbent polymer as applicant claims. The prior art of record does not describe combining lubricants with a superabsorbent polymer that absorbs greater than about 100 times its weight in water. For example, Guersen only describes a method of forming polymer-lubricant oil-in-water emulsions with superabsorbent polymers that absorb approximately 45 times their weight in water. Absent such a disclosure, applicant submits that the combination of references neither teaches nor suggests the presently claimed invention.

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The Provisional Double Patenting Rejection and Travers

The Examiner provisionally rejects claims 29-43 under the judicially created doctrine of obviousness-type double patenting in view of copending application Serial No. 09/359,809 filed July 23, 1999.

Applicants point out that the present Examiner has also issued a provisional double patenting rejection in copending application Serial No. 09/359,809 filed July 23, 1999, which has not issued as a patent. Applicants should not be required to file a terminal disclaimer in the present application since the Patent Office may not allow the copending application which forms the basis for the double patenting rejection. When a provisional double patenting rejection is the sole remaining rejection in an application otherwise in condition for allowance, the M.P.E.P. states that the Examiner should withdraw the rejection in the application and permit it to issue as a patent. M.P.E.P. § 804(I.)(B) p. 800-15 July 1998.

Conclusions

Applicant therefore requests the Examiner withdraw the rejections in view of the foregoing amendments and remarks and pass the application as amended to issue.

If filing this amendment requires an extension of time pursuant to 37 C.F.R. §1.136 and payment of an extension fee or other fee, any of which this amendment fails to account for, applicant's attorneys request such an extension and payment of any fee due from their deposit account 06-0916.

Respectfully submitted,

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Dated: September 7, 2001

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PATENT
CUSTOMER NUMBER 22,852
Attorney Docket No. 01064.0011-04000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Richard LEVY)
Serial No.: 09/357,957) Group Art Unit: 1714
Filed: July 21, 1999) Examiner: M. Medley
For: LUBRICANT COMPOSITIONS)
AND METHODS)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

SUBMISSION OF MARKED UP VERSION OF CLAIMS
PURSUANT TO 37 C.F.R. §1.121

Applicant submits the following marked-up version of amended claims pursuant to 37 C.F.R. § 1.121 along with the amendment in response to the communication from the Examiner of July 5, 2001.

IN THE CLAIMS:

29. (Amended Once) A lubricating composition of matter consisting essentially of [which is] a superabsorbent polymer that absorbs greater than about 100 times its weight in water combined with a material for decreasing friction between moving surfaces wherein said material for decreasing friction is a petroleum oil lubricant

or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, and mixtures thereof.

31. (Amended Once) The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid lubricant, wherein said solid lubricant is an inorganic compound, carbon, or metal that provides barrier-layer lubrication, or mixtures thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

34. (Amended Once) The composition of claim 33 where said solid organic lubricant is a fluoroalkylene homopolymer or copolymer, a lower alkylene polyolefin homopolymer or co-polymer, a paraffinic hydrocarbon[,] wax, phenanthrene, copper phthalocyanine, or mixtures thereof.

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36. (Amended Once) The composition of claim [35 where said material for decreasing friction is oil, or greases thereof, and water.] 29 consisting essentially of a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is an oil or greases thereof and water, optionally containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

37. (Amended Once) The composition of claim [35 where said material for decreasing friction is a solid lubricant and water.] 29 consisting essentially of a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid lubricant and water, optionally containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

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38. (Amended Once) The composition of claim 37 where said solid lubricant is graphite, molybdenum disulfide, cobalt chloride, antimony oxide, niobium selenide, tungsten disulfide, mica, boron nitride, silver sulfate, cadmium chloride, cadmium iodide, borax, basic white lead, lead carbonate, lead iodide, asbestos, talc, zinc oxide, carbon, babbit, bronze, brass, aluminum, gallium, indium, thallium, thorium, copper, silver, gold, mercury, lead, tin, indium, the Group VIII noble metals, a fluoroalkylene homopolymer or copolymer, a lower alkylene polyolefin homopolymer or co-polymer, a paraffinic hydrocarbon[,] wax, phenanthrene, copper phthalocyanine, or mixtures thereof.

40. (Amended Once) The composition of claim [38] 39 where said material for decreasing friction is zinc phosphate, iron phosphate or manganese phosphate, or mixtures thereof.

41. (Amended Once) The composition of claim 29 where said lubricating composition consists essentially of a superabsorbent polymer combined with a material for decreasing friction between moving surfaces, where said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a fatty oil, fatty acid or wax, or mixtures thereof and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

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REMARKS

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Dated: September 7, 2001

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